

10/534043

SEQUENCE LISTING

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<110> Immunokick Inc.

<120> TRANSGENIC MAMMAL CARRYING GANP GENE TRANSFERRED THEREINTO AND
UTILIZATION THEREOF

<130> P03-0152PCT

<140> PCT/JP03/014221

<141> 2003-11-07

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<151> 2002-11-07

<160> 36

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<210> 1

<211> 6429

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (384).. (6299)

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Ser Pro Ser Ala Phe Ala Val Ser Ser Ser Thr Thr Gly Thr Tyr Gln	
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Thr Lys Ser Pro Phe Arg Phe Gly Gln Pro Ser Leu Phe Gly Gln Asn	
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Phe Gly Pro Glu Thr Gly Glu Val Ala Gly Ser Gly Phe Arg Lys Thr			
125	130	135	
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Glu Phe Lys Phe Lys Pro Leu Glu Asn Ala Val Phe Lys Pro Ile Pro			
140	145	150	
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Gly Pro Glu Ser Glu Pro Glu Lys Thr Gln Ser Gln Ile Ser Ser Gly			
155	160	165	170
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Phe Phe Thr Phe Ser His Pro Val Gly Ser Gly Ser Gly Gly Leu Thr			
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Pro Phe Ser Phe Pro Gln Val Thr Asn Ser Ser Val Thr Ser Ser Ser			
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Pro Leu Ser Asn Gln Asn Val Glu Glu Glu Lys Arg Val Ser Thr Ser			
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Pro Gly Ser Leu Gly Glu Pro Phe Pro Ala Asn Lys Pro Ser Leu Arg			

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Met Lys Gly Leu Lys Arg Lys Glu Asp Gln Asp Arg Ser Pro Arg Arg			
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His Cys His Glu Ala Ala Glu Asp Pro Asp Pro Leu Ser Arg Gly Asp			
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His Pro Pro Asp Lys Arg Pro Val Arg Leu Asn Arg Pro Arg Gly Gly			
315	320	325	330
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Thr Leu Phe Gly Arg Thr Ile Gln Glu Val Phe Lys Ser Asn Lys Glu			
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Pro Gly Glu Ser Asp His Ala Ala Val Pro Gly Gly Ser Gln Ser Thr			
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Met Val Pro Ser Arg Leu Pro Ala Val Thr Lys Glu Glu Glu Glu Ser			
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Arg Asp Glu Lys Glu Asp Ser Leu Arg Gly Lys Ser Val Arg Gln Ser			

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Lys Arg Arg Glu Glu Trp Ile Tyr Ser Leu Gly Gly Val Ser Ser Leu				
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gag ctc aca gcc atc cag tgc aag aac atc ccc gac tac ctc aac gac				1709
Glu Leu Thr Ala Ile Gln Cys Lys Asn Ile Pro Asp Tyr Leu Asn Asp				
	430	435	440	
aga gcc atc ctg gag aaa cac ttc agc aaa atc gct aaa gtc cag cgg				1757
Arg Ala Ile Leu Glu Lys His Phe Ser Lys Ile Ala Lys Val Gln Arg				
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gtc ttc acc aga cgc agc aag aag ctc gcc gtg att cat ttt ttc gac				1805
Val Phe Thr Arg Arg Ser Lys Lys Leu Ala Val Ile His Phe Phe Asp				
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His Ala Ser Ala Ala Leu Ala Arg Lys Lys Gly Lys Gly Leu His Lys				
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Asp Val Val Ile Phe Trp His Lys Lys Lys Ile Ser Pro Ser Lys Lys				
	495	500	505	
ctc ttt ccc ctg aag gag aag ctt ggt gag agt gaa gcc agc cag ggc				1949
Leu Phe Pro Leu Lys Glu Lys Leu Gly Glu Ser Glu Ala Ser Gln Gly				
	510	515	520	
atc gag gac tcc ccc ttt cag cac tcg cct ctc agc aag ccc atc gtg				1997
Ile Glu Asp Ser Pro Phe Gln His Ser Pro Leu Ser Lys Pro Ile Val				
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agg cct gca gcc ggc agc ctc ctc agc aaa agc tct cca gtg aag aag				2045
Arg Pro Ala Ala Gly Ser Leu Leu Ser Lys Ser Ser Pro Val Lys Lys				

540	545	550	
ccg agt ctt ctg aag atg cac cag ttt gag gcg gat cct ttt gac tct			2093
Pro Ser Leu Leu Lys Met His Gln Phe Glu Ala Asp Pro Phe Asp Ser			
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Gly Ser Glu Gly Ser Glu Gly Leu Gly Ser Cys Val Ser Ser Leu Ser			
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acc ctg ata ggg act gtg gca gac aca tct gag gag aag tac cgc ctt			2189
Thr Leu Ile Gly Thr Val Ala Asp Thr Ser Glu Glu Lys Tyr Arg Leu			
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Leu Asp Gln Arg Asp Arg Ile Met Arg Gln Ala Arg Val Lys Arg Thr			
	605	610	615
gac ctg gac aaa gcc agg gca ttt gtt ggg act tgc cct gac atg tgt			2285
Asp Leu Asp Lys Ala Arg Ala Phe Val Gly Thr Cys Pro Asp Met Cys			
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Pro Glu Lys Glu Arg Tyr Leu Arg Glu Thr Arg Ser Gln Leu Ser Val			
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Phe Glu Val Val Pro Gly Thr Asp Gln Val Asp His Ala Ala Ala Val			
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Lys Glu Tyr Ser Arg Ser Ser Ala Asp Gln Glu Glu Pro Leu Pro His			
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Glu Leu Arg Pro Ser Ala Val Leu Ser Arg Thr Met Asp Tyr Leu Val			

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Thr Gln Ile Met Asp Gln Lys Glu Gly Ser Leu Arg Asp Trp Tyr Asp			
700	705	710	
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Phe Val Trp Asn Arg Thr Arg Gly Ile Arg Lys Asp Ile Thr Gln Gln			
715	720	725	730
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His Leu Cys Asp Pro Leu Thr Val Ser Leu Ile Glu Lys Cys Thr Arg			
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Phe His Ile His Cys Ala His Phe Met Cys Glu Glu Pro Met Ser Ser			
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Phe Asp Ala Lys Ile Asn Asn Glu Asn Met Thr Lys Cys Leu Gln Ser			
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Ser Glu Ala Glu Phe Gln Gly Tyr Asn Val Leu Leu Asn Leu Asn Lys			
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Gly Asp Ile Leu Arg Glu Val Gln Gln Phe His Pro Asp Val Arg Asn			
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Ser Pro Glu Val Asn Phe Ala Val Gln Ala Phe Ala Ala Leu Asn Ser			

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Asn Asn Phe Val Arg Phe Phe Lys Leu Val Gln Ser Ala Ser Tyr Leu			
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Asn Ala Cys Leu Leu His Cys Tyr Phe Asn Gln Ile Arg Lys Asp Ala			
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ctc cgg gca ctc aat gtt gct tat act gta agc aca cag cgc tct acc			3053
Leu Arg Ala Leu Asn Val Ala Tyr Thr Val Ser Thr Gln Arg Ser Thr			
875	880	885	890
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Glu Glu Ala Thr Asn Phe Leu Asn Tyr His Gly Leu Thr Val Ala Asp			
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Gly Cys Val Glu Leu Asn Arg Ser Ala Phe Leu Glu Pro Glu Gly Leu			
925	930	935	
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Cys Lys Ala Arg Lys Ser Val Phe Ile Gly Arg Lys Leu Thr Val Ser			
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Val Gly Glu Val Val Asn Gly Gly Pro Leu Pro Pro Val Pro Arg His			
955	960	965	970
aca cct gtg tgc agc ttc aac tcc cag aat aag tac gtt gga gag agc			3341
Thr Pro Val Cys Ser Phe Asn Ser Gln Asn Lys Tyr Val Gly Glu Ser			

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Pro Thr Leu Ala Val Leu Pro Gln	Pro Pro Pro Ala Ser	Ser Ala	
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Thr Pro Ala Leu His Val Gln Pro	Leu Ala Pro Ala Ala	Ala Pro	
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Glu Leu Ile Gln Glu Ala Leu Gln	Val Asp Cys Glu Glu	Val Ser	
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Ser Ala Gly Ala Ala Tyr Val Ala	Ala Ala Leu Gly Val	Ser Asn	
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Ala Ala Val Glu Asp Leu Ile Thr	Ala Ala Thr Thr Gly	Ile Leu	

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Arg His Val Ala Ala Glu Glu Val Ser Met Glu Arg Gln Arg Leu			
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Glu Glu Glu Lys Gln Arg Ala Glu Glu Glu Arg Leu Lys Gln Glu			
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aga gaa ctg atg tta act cag ctg agc gag ggt ctg gcc gca gag			3884
Arg Glu Leu Met Leu Thr Gln Leu Ser Glu Gly Leu Ala Ala Glu			
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Leu Thr Glu Leu Thr Val Thr Glu Cys Val Trp Glu Thr Cys Ser			
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Gln Glu Leu Gln Ser Ala Val Lys Ile Asp Gln Lys Val Arg Val			
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Ala Arg Cys Cys Glu Ala Val Cys Ala His Leu Val Asp Leu Phe			
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Leu Ala Glu Glu Ile Phe Gln Thr Ala Lys Glu Thr Leu Gln Glu			
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Leu Gln Cys Phe Cys Lys Tyr Leu Gln Arg Trp Arg Glu Ala Val			
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Ala Ala Arg Lys Lys Phe Arg Arg Gln Met Arg Ala Phe Pro Ala			

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Pro Ser Ala Glu Cys Pro Ile Thr	Glu Glu Asn Leu Ala Lys Gly		
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Arg Leu Arg Arg Leu Arg Asn Lys	Thr Ala His Gln Ile Lys Val		
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Ser Ser Lys Gly Asp Gln Thr Val	Ser Val Asn Val Cys	Ile Lys	
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Thr Gln Lys Asp Leu Leu Gly Thr	Ser Gly Leu Met Leu	Leu Leu	
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Trp Leu Ser Ala Leu Leu Gln Leu	Lys Gln Leu Leu Gln	Ala Lys	
1470	1475	1480	
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Pro Phe Gln Pro Ala Leu Pro Leu	Val Val Leu Val Pro	Ser Ser	
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Arg Gly Asp Ser Ala Gly Arg Ala	Val Glu Asp Gly Leu	Met Leu	
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Gln Asp Leu Val Ser Ala Lys Leu	Ile Ser Asp Tyr Ile	Val Val	

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Glu Ile Pro	Asp Ser Val Asn Asp	Leu Gln Gly Thr Val	Lys Val
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Ser Gly Ala	Val Gln Trp Leu Ile	Ser Gly Cys Pro Gln	Ala Leu
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Asp Leu Cys	Cys Gln Thr Leu Val	Gln Tyr Val Glu Asp	Gly Ile
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Ser Arg Glu	Phe Ser Arg Arg Phe	Phe His Asp Arg Arg	Glu Arg
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Arg Leu Ala	Ser Leu Pro Ser Gln	Glu Pro Ser Thr Ile	Ile Glu
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Leu Phe Asn	Ser Val Leu Gln Phe	Leu Ala Ser Val Val	Ser Ser
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Glu Gln Leu	Cys Asp Ile Ser Trp	Pro Val Met Glu Phe	Ala Glu
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Val Gly Gly	Ser Gln Leu Leu Pro	His Leu His Trp Asn	Ser Pro
1635	1640	1645	
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Glu His Leu	Ala Trp Leu Lys Gln	Ala Val Leu Gly Phe	Gln Leu

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cca cag atg gac ctt cca ccc cca	ggg gcc ccc tgg ctc cct gtg	5414	
Pro Gln Met Asp Leu Pro Pro Pro	Gly Ala Pro Trp Leu Pro Val		
1665	1670	1675	
tgt tcc atg gtc att cag tac acc	tcc cag att ccc agc tca agc	5459	
Cys Ser Met Val Ile Gln Tyr Thr	Ser Gln Ile Pro Ser Ser Ser		
1680	1685	1690	
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Gln Thr Gln Pro Val Leu Gln Ser	Gln Ala Glu Asn Leu Leu Cys		
1695	1700	1705	
aga aca tac cag aag tgg aag aac	aag agc ctc tct cca ggc cag	5549	
Arg Thr Tyr Gln Lys Trp Lys Asn	Lys Ser Leu Ser Pro Gly Gln		
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Glu Leu Gly Pro Ser Val Ala Glu	Ile Pro Trp Asp Asp Ile Ile		
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Thr Leu Cys Ile Asn His Lys Leu	Arg Asp Trp Thr Pro Pro Arg		
1740	1745	1750	
ctc cct gtc aca tta gag gcg ctg	agt gaa gat ggt caa ata tgt	5684	
Leu Pro Val Thr Leu Glu Ala Leu	Ser Glu Asp Gly Gln Ile Cys		
1755	1760	1765	
gtg tat ttt ttc aaa aac ctt tta	aga aaa tac cac gtt ccc tcg	5729	
Val Tyr Phe Phe Lys Asn Leu Leu	Arg Lys Tyr His Val Pro Ser		
1770	1775	1780	
tca tgg gaa cag gcc aga atg cag	acg cag cgg gaa ctg cag ctg	5774	
Ser Trp Glu Gln Ala Arg Met Gln	Thr Gln Arg Glu Leu Gln Leu		

1785	1790	1795	
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Ser His Gly	Arg Ser Gly Met Arg	Ser Ile His Pro Pro	Thr Ser
1800	1805	1810	
act ttt cct	act cca ttg ctt cat	gta cac cag aaa ggg	aag aaa 5864
Thr Phe Pro	Thr Pro Leu Leu His	Val His Gln Lys Gly	Lys Lys
1815	1820	1825	
aag gaa gag	agt ggc cga gag ggg	agc ctc agt aca gag	gac ctc 5909
Lys Glu Glu	Ser Gly Arg Glu Gly	Ser Leu Ser Thr Glu	Asp Leu
1830	1835	1840	
ctg cgg ggg	gct tct gca gaa gag	ctc ctg gca cag agt	ctg tcc 5954
Leu Arg Gly	Ala Ser Ala Glu Glu	Leu Leu Ala Gln Ser	Leu Ser
1845	1850	1855	
agc agt ctt	ctg gaa gag aag gaa	gag aac aag agg ttt	gaa gat 5999
Ser Ser Leu	Leu Glu Glu Lys Glu	Glu Asn Lys Arg Phe	Glu Asp
1860	1865	1870	
caa ctt cag	cag tgg tta tcg caa	gac tca cag gca ttc	aca gag 6044
Gln Leu Gln	Gln Trp Leu Ser Gln	Asp Ser Gln Ala Phe	Thr Glu
1875	1880	1885	
tca act cgg	ctt cct ctc tac ctc	cct cag acg cta gtg	tcc ttt 6089
Ser Thr Arg	Leu Pro Leu Tyr Leu	Pro Gln Thr Leu Val	Ser Phe
1890	1895	1900	
cct gat tct	atc aaa act cag acc	atg gtg aaa aca tct	aca agt 6134
Pro Asp Ser	Ile Lys Thr Gln Thr	Met Val Lys Thr Ser	Thr Ser
1905	1910	1915	
cct cag aat	tca gga aca gga aag	cag ttg agg ttc tca	gag gca 6179
Pro Gln Asn	Ser Gly Thr Gly Lys	Gln Leu Arg Phe Ser	Glu Ala

Leu Ala Phe Ser Gln Val Pro Ser Phe Ala Thr Pro Ser Gly Gly Ser
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His Ser Ser Ser Leu Pro Ala Phe Gly Leu Thr Gln Thr Ser Ser Val
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Gly Leu Phe Ser Ser Leu Glu Ser Thr Pro Ser Phe Ala Ala Thr Ser
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Ser Ser Ser Val Pro Gly Asn Thr Ala Phe Ser Phe Lys Ser Thr Ser
100 105 110

Ser Val Gly Val Phe Pro Ser Gly Ala Thr Phe Gly Pro Glu Thr Gly
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Glu Val Ala Gly Ser Gly Phe Arg Lys Thr Glu Phe Lys Phe Lys Pro
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Leu Glu Asn Ala Val Phe Lys Pro Ile Pro Gly Pro Glu Ser Glu Pro
145 150 155 160

Glu Lys Thr Gln Ser Gln Ile Ser Ser Gly Phe Phe Thr Phe Ser His
165 170 175

Pro Val Gly Ser Gly Ser Gly Gly Leu Thr Pro Phe Ser Phe Pro Gln
180 185 190

Val Thr Asn Ser Ser Val Thr Ser Ser Ser Phe Ile Phe Ser Lys Pro
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Val Thr Ser Asn Thr Pro Ala Phe Ala Ser Pro Leu Ser Asn Gln Asn
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Val Glu Glu Glu Lys Arg Val Ser Thr Ser Ala Phe Gly Ser Ser Asn
225 230 235 240

Ser Ser Phe Ser Thr Phe Pro Thr Ala Ser Pro Gly Ser Leu Gly Glu
245 250 255

Pro Phe Pro Ala Asn Lys Pro Ser Leu Arg Gln Gly Cys Glu Glu Ala
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Ile Ser Gln Val Glu Pro Leu Pro Thr Leu Met Lys Gly Leu Lys Arg
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Lys Glu Asp Gln Asp Arg Ser Pro Arg Arg His Cys His Glu Ala Ala
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Glu Asp Pro Asp Pro Leu Ser Arg Gly Asp His Pro Pro Asp Lys Arg
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Pro Val Arg Leu Asn Arg Pro Arg Gly Gly Thr Leu Phe Gly Arg Thr
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Lys Glu Ser Lys Glu Ser Gly Phe Ala Glu Pro Gly Glu Ser Asp His
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Pro Ala Val Thr Lys Glu Glu Glu Glu Ser Arg Asp Glu Lys Glu Asp
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Ser Leu Arg Gly Lys Ser Val Arg Gln Ser Lys Arg Arg Glu Glu Trp
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Ile Tyr Ser Leu Gly Gly Val Ser Ser Leu Glu Leu Thr Ala Ile Gln
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Cys Lys Asn Ile Pro Asp Tyr Leu Asn Asp Arg Ala Ile Leu Glu Lys
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His Phe Ser Lys Ile Ala Lys Val Gln Arg Val Phe Thr Arg Arg Ser
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465 470 475 480

Ala Arg Lys Lys Gly Lys Gly Leu His Lys Asp Val Val Ile Phe Trp
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His Lys Lys Lys Ile Ser Pro Ser Lys Lys Leu Phe Pro Leu Lys Glu
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Gln His Ser Pro Leu Ser Lys Pro Ile Val Arg Pro Ala Ala Gly Ser
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Leu Leu Ser Lys Ser Ser Pro Val Lys Lys Pro Ser Leu Leu Lys Met
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Ala Asp Thr Ser Glu Glu Lys Tyr Arg Leu Leu Asp Gln Arg Asp Arg
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Ala Phe Val Gly Thr Cys Pro Asp Met Cys Pro Glu Lys Glu Arg Tyr
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Leu Arg Glu Thr Arg Ser Gln Leu Ser Val Phe Glu Val Val Pro Gly
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Val Leu Ser Arg Thr Met Asp Tyr Leu Val Thr Gln Ile Met Asp Gln
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His Phe Met Cys Glu Glu Pro Met Ser Ser Phe Asp Ala Lys Ile Asn
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Cys Tyr Phe Asn Gln Ile Arg Lys Asp Ala Leu Arg Ala Leu Asn Val
865 870 875 880

Ala Tyr Thr Val Ser Thr Gln Arg Ser Thr Val Phe Pro Leu Asp Gly
885 890 895

Val Val Arg Met Leu Leu Phe Arg Asp Ser Glu Glu Ala Thr Asn Phe
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Asp	Ser	Asp	Leu	Val	Gln	Val	Val	Asp	Glu	Leu	Ile	Gln	Glu	Ala
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Leu	Gln	Val	Asp	Cys	Glu	Glu	Val	Ser	Ser	Ala	Gly	Ala	Ala	Tyr
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Ile	Thr	Ala	Ala	Thr	Thr	Gly	Ile	Leu	Arg	His	Val	Ala	Ala	Glu
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Gln	Leu	Ser	Glu	Gly	Leu	Ala	Ala	Glu	Leu	Thr	Glu	Leu	Thr	Val
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 650 655 660

ggg act gac cag gtg gac cac gca gca gct gtg aaa gag tac agt cgg 2071
Gly Thr Asp Gln Val Asp His Ala Ala Ala Val Lys Glu Tyr Ser Arg
665 670 675

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Ser Ser Ala Asp Gln Glu Glu Pro Leu Pro His Glu Leu Arg Pro Leu	
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cca gtg ctc agc agg acc atg gac tac ctg gtg acc cag atc atg gac	2167
Pro Val Leu Ser Arg Thr Met Asp Tyr Leu Val Thr Gln Ile Met Asp	
695 700 705 710	
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Gln Lys Glu Gly Ser Leu Arg Asp Trp Tyr Asp Phe Val Trp Asn Arg	
715 720 725	
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Thr Arg Gly Ile Arg Lys Asp Ile Thr Gln Gln His Leu Cys Asp Pro	
730 735 740	
ctg acg gtg tcc ctg att gag aag tgc acc cgg ttt cac atc cac tgt	2311
Leu Thr Val Ser Leu Ile Glu Lys Cys Thr Arg Phe His Ile His Cys	
745 750 755	
gcc cac ttc atg tgt gag gag ccc atg tcc tcc ttt gat gcc aag atc	2359
Ala His Phe Met Cys Glu Glu Pro Met Ser Ser Phe Asp Ala Lys Ile	
760 765 770	
aat aat gag aac atg acc aag tgc ctg cag agc ctg aag gag atg tac	2407
Asn Asn Glu Asn Met Thr Lys Cys Leu Gln Ser Leu Lys Glu Met Tyr	
775 780 785 790	
cag gac ctg aga aac aag ggt gtc ttc tgt gcc agc gaa gcg gag ttc	2455
Gln Asp Leu Arg Asn Lys Gly Val Phe Cys Ala Ser Glu Ala Glu Phe	
795 800 805	
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Gln Gly Tyr Asn Val Leu Leu Ser Leu Asn Lys Gly Asp Ile Leu Arg	
810 815 820	

gaa gta caa cag ttc cat cct gct gtt aga aac tca tct gag gtg aaa	2551
Glu Val Gln Gln Phe His Pro Ala Val Arg Asn Ser Ser Glu Val Lys	
825 830 835	
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Phe Ala Val Gln Ala Phe Ala Ala Leu Asn Ser Asn Asn Phe Val Arg	
840 845 850	
ttt ttc aaa ctg gtc cag tca gct tct tac ctg aac gct tgt ctt tta	2647
Phe Phe Lys Leu Val Gln Ser Ala Ser Tyr Leu Asn Ala Cys Leu Leu	
855 860 865 870	
cac tgt tac ttc agt cag atc cgc aag gat gct ctc cgg gcg ctc aac	2695
His Cys Tyr Phe Ser Gln Ile Arg Lys Asp Ala Leu Arg Ala Leu Asn	
875 880 885	
ttt gcg tac acg gtg agc aca cag cga tct acc atc ttt ccc ctg gat	2743
Phe Ala Tyr Thr Val Ser Thr Gln Arg Ser Thr Ile Phe Pro Leu Asp	
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Gly Val Val Arg Met Leu Leu Phe Arg Asp Cys Glu Glu Ala Thr Asp	
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Phe Leu Thr Cys His Gly Leu Thr Val Ser Asp Gly Cys Val Glu Leu	
920 925 930	
aac cgg tct gca ttc ctg gaa cca gag gga tta tcc aag acc agg aag	2887
Asn Arg Ser Ala Phe Leu Glu Pro Glu Gly Leu Ser Lys Thr Arg Lys	
935 940 945 950	
tcg gtg ttt att act agg aag ctg acg gtg tca gtc ggg gaa att gtg	2935
Ser Val Phe Ile Thr Arg Lys Leu Thr Val Ser Val Gly Glu Ile Val	
955 960 965	

aac gga ggg cca ttg ccc ccc gtc cct cgt cac acc cct gtg tgc agc	2983
Asn Gly Gly Pro Leu Pro Pro Val Pro Arg His Thr Pro Val Cys Ser	
970 975 980	
ttc aac tcc cag aac aag tac atc ggg gag agc ctg gcc gcg gag ctg	3031
Phe Asn Ser Gln Asn Lys Tyr Ile Gly Glu Ser Leu Ala Ala Glu Leu	
985 990 995	
ccc gtc agc acc cag aga ccc ggc tcc gac aca gtg ggc gga ggg	3076
Pro Val Ser Thr Gln Arg Pro Gly Ser Asp Thr Val Gly Gly Gly	
1000 1005 1010	
aga gga gag gag tgt ggt gta gag ccg gat gca ccc ctg tcc agt	3121
Arg Gly Glu Glu Cys Gly Val Glu Pro Asp Ala Pro Leu Ser Ser	
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ctc cca cag tct cta cca gcc cct gcg ccc tca cca gtg cct ctg	3166
Leu Pro Gln Ser Leu Pro Ala Pro Ala Pro Ser Pro Val Pro Leu	
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cct cct gtc ctg gca ctg acc ccg tct gtg gcg ccc agc ctc ttc	3211
Pro Pro Val Leu Ala Leu Thr Pro Ser Val Ala Pro Ser Leu Phe	
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cag ctg tct gtg cag cct gaa cca ccg cct cca gag ccc gtg ccc	3256
Gln Leu Ser Val Gln Pro Glu Pro Pro Pro Pro Glu Pro Val Pro	
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Met Tyr Ser Asp Glu Asp Leu Ala Gln Val Val Asp Glu Leu Ile	
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Gln Glu Ala Leu Gln Arg Asp Cys Glu Glu Val Gly Ser Ala Gly	
1090 1095 1100	

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Ala Ala	Tyr Ala Ala Ala Ala	Leu Gly Val Ser Asn	Ala Ala Met	
1105	1110	1115		
gag gat	ttg tta aca gct gca	acc acg ggc att ttg	agg cac att	3436
Glu Asp	Leu Leu Thr Ala Ala	Thr Thr Gly Ile Leu	Arg His Ile	
1120	1125	1130		
gca gct	gaa gaa gtg tct aag	gaa aga gag cga agg	gag cag gag	3481
Ala Ala	Glu Glu Val Ser Lys	Glu Arg Glu Arg Arg	Glu Gln Glu	
1135	1140	1145		
agg cag	cgg gct gaa gag gaa	agg ttg aaa caa gag	aga gag ctg	3526
Arg Gln	Arg Ala Glu Glu Glu	Arg Leu Lys Gln Glu	Arg Glu Leu	
1150	1155	1160		
gtg tta	agt gag ctg agc cag	ggc ctg gcc gtg gag	ctg atg gaa	3571
Val Leu	Ser Glu Leu Ser Gln	Gly Leu Ala Val Glu	Leu Met Glu	
1165	1170	1175		
cgc gtg	atg atg gag ttt gtg	agg gaa acc tgc tcc	cag gag ttg	3616
Arg Val	Met Met Glu Phe Val	Arg Glu Thr Cys Ser	Gln Glu Leu	
1180	1185	1190		
aag aat	gca gta gag aca gac	cag agg gtc cgt gtg	gcc cgt tgc	3661
Lys Asn	Ala Val Glu Thr Asp	Gln Arg Val Arg Val	Ala Arg Cys	
1195	1200	1205		
tgt gag	gat gtc tgt gcc cac	tta gtg gac ttg ttt	ctc gtg gag	3706
Cys Glu	Asp Val Cys Ala His	Leu Val Asp Leu Phe	Leu Val Glu	
1210	1215	1220		
gaa atc	ttc cag act gca aag	gag acc ctc cag gag	ctt cag tgc	3751
Glu Ile	Phe Gln Thr Ala Lys	Glu Thr Leu Gln Glu	Leu Gln Cys	
1225	1230	1235		

ttc tgc aag tat cta cag cgg tgg agg gaa gct gtc aca gcc cgc	3796
Phe Cys Lys Tyr Leu Gln Arg Trp Arg Glu Ala Val Thr Ala Arg	
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Lys Lys Leu Arg Arg Gln Met Arg Ala Phe Pro Ala Ala Pro Cys	
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Cys Val Asp Val Ser Asp Arg Leu Arg Ala Leu Ala Pro Ser Ala	
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Glu Cys Pro Ile Ala Glu Glu Asn Leu Ala Arg Gly Leu Leu Asp	
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Leu Gly His Ala Gly Arg Leu Gly Ile Ser Cys Thr Arg Leu Arg	
1300 1305 1310	
cgg ctc aga aac aag aca gct cac cag atg aag gtt cag cac ttc	4021
Arg Leu Arg Asn Lys Thr Ala His Gln Met Lys Val Gln His Phe	
1315 1320 1325	
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Tyr Gln Gln Leu Leu Ser Asp Val Ala Trp Ala Ser Leu Asp Leu	
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cca tcc ctc gtg gct gag cac ctc cct ggg agg cag gag cat gtg	4111
Pro Ser Leu Val Ala Glu His Leu Pro Gly Arg Gln Glu His Val	
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Phe Trp Lys Leu Val Leu Val Leu Pro Asp Val Glu Glu Gln Ser	
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cca gag	agt tgt	ggc aga	att	cta gca	aat tgg	tta	aaa gtc	aag	4201
Pro Glu	Ser Cys	Gly Arg	Ile	Leu Ala	Asn Trp	Leu	Lys Val	Lys	
1375			1380			1385			
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Phe Met	Gly Asp	Glu Gly	Ser	Val Asp	Asp Thr	Ser	Ser Asp	Ala	
1390			1395			1400			
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Gly Gly	Ile Gln	Thr Leu	Ser	Leu Phe	Asn Ser	Leu	Ser Ser	Lys	
1405			1410			1415			
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Gly Asp	Gln Met	Ile Ser	Val	Asn Val	Cys Ile	Lys	Val Ala	His	
1420			1425			1430			
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Gly Ala	Leu Ser	Asp Gly	Ala	Ile Asp	Ala Val	Glu	Thr Gln	Lys	
1435			1440			1445			
gac ctc	ctg gga	gcc agt	ggg	ctc atg	ctg ctg	ctt	ccc ccc	aaa	4426
Asp Leu	Leu Gly	Ala Ser	Gly	Leu Met	Leu Leu	Leu	Pro Pro	Lys	
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atg aag	agt gag	gac atg	gca	gag gag	gac gtg	tac	tgg ctg	tcg	4471
Met Lys	Ser Glu	Asp Met	Ala	Glu Glu	Asp Val	Tyr	Trp Leu	Ser	
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gcc ttg	ctg cag	ctc aag	cag	ctc ctg	cag gct	aag	ccc ttc	cag	4516
Ala Leu	Leu Gln	Leu Lys	Gln	Leu Leu	Gln Ala	Lys	Pro Phe	Gln	
1480			1485			1490			
cct gcg	ctt cct	ctg gtg	gtt	ctt gtg	cct agc	cca	gga ggg	gac	4561
Pro Ala	Leu Pro	Leu Val	Val	Leu Val	Pro Ser	Pro	Gly Gly	Asp	
1495			1500			1505			

gcc gtt	gag aag gaa gta gaa	gat ggt ctg atg cta	cag gac ttg	4606
Ala Val	Glu Lys Glu Val Glu	Asp Gly Leu Met Leu	Gln Asp Leu	
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gtt tca	gct aag ctg att tca	gat tac act gtt acc	gag atc cct	4651
Val Ser	Ala Lys Leu Ile Ser	Asp Tyr Thr Val Thr	Glu Ile Pro	
1525	1530	1535		
gat acc	att aat gat cta caa	ggt tca act aag gtt	ttg caa gca	4696
Asp Thr	Ile Asn Asp Leu Gln	Gly Ser Thr Lys Val	Leu Gln Ala	
1540	1545	1550		
gtg cag	tgg ctg gtt tcc cac	tgc ccc cat tcc ctt	gac ctc tgc	4741
Val Gln	Trp Leu Val Ser His	Cys Pro His Ser Leu	Asp Leu Cys	
1555	1560	1565		
tgc cag	act ctc att cag tac	gtc gaa gac ggg att	ggc cat gag	4786
Cys Gln	Thr Leu Ile Gln Tyr	Val Glu Asp Gly Ile	Gly His Glu	
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ttt agt	ggc cgc ttt ttc cat	gac aga aga gag agg	cgt ctg ggc	4831
Phe Ser	Gly Arg Phe Phe His	Asp Arg Arg Glu Arg	Arg Leu Gly	
1585	1590	1595		
ggt ctt	gct tct cag gag cct	ggc gcc atc att gag	ctg ttt aac	4876
Gly Leu	Ala Ser Gln Glu Pro	Gly Ala Ile Ile Glu	Leu Phe Asn	
1600	1605	1610		
agt gtg	ctg cag ttc ctg gct	tct gtg gtg tcc tct	gaa cag ctg	4921
Ser Val	Leu Gln Phe Leu Ala	Ser Val Val Ser Ser	Glu Gln Leu	
1615	1620	1625		
tgt gac	ctg tcc tgg cct gtc	act gag ttt gct gag	gca ggg ggc	4966
Cys Asp	Leu Ser Trp Pro Val	Thr Glu Phe Ala Glu	Ala Gly Gly	
1630	1635	1640		

agc cgg	ctg ctt cct cac ctg	cac tgg aat gcc cca	gag cac ctg	5011
Ser Arg	Leu Leu Pro His Leu	His Trp Asn Ala Pro	Glu His Leu	
1645	1650	1655		
gcc tgg	ctg aag cag gct gtg	ctc ggg ttc cag ctt	ccg cag atg	5056
Ala Trp	Leu Lys Gln Ala Val	Leu Gly Phe Gln Leu	Pro Gln Met	
1660	1665	1670		
gac ctt	cca ccc ctg ggg gcc	ccc tgg ctc ccc gtg	tgc tcc atg	5101
Asp Leu	Pro Pro Leu Gly Ala	Pro Trp Leu Pro Val	Cys Ser Met	
1675	1680	1685		
gtt gtc	cag tac gcc tcc cag	atc ccc agc tca cgc	cag aca cag	5146
Val Val	Gln Tyr Ala Ser Gln	Ile Pro Ser Ser Arg	Gln Thr Gln	
1690	1695	1700		
cct gtc	ctc cag tcc cag gtg	gag aac ctg ctc cac	aga acc tac	5191
Pro Val	Leu Gln Ser Gln Val	Glu Asn Leu Leu His	Arg Thr Tyr	
1705	1710	1715		
tgt agg	tgg aag agc aag agt	ccc tcc cca gtc cat	ggg gca ggc	5236
Cys Arg	Trp Lys Ser Lys Ser	Pro Ser Pro Val His	Gly Ala Gly	
1720	1725	1730		
ccc tcg	gtc atg gag atc cca	tgg gat gat ctt atc	gcc ttg tgt	5281
Pro Ser	Val Met Glu Ile Pro	Trp Asp Asp Leu Ile	Ala Leu Cys	
1735	1740	1745		
atc aac	cac aag ctg aga gac	tgg acg ccc ccc cgg	ctt cct gtt	5326
Ile Asn	His Lys Leu Arg Asp	Trp Thr Pro Pro Arg	Leu Pro Val	
1750	1755	1760		
aca tca	gag gcg ctg agt gaa	gat ggt cag ata tgt	gtg tat ttt	5371
Thr Ser	Glu Ala Leu Ser Glu	Asp Gly Gln Ile Cys	Val Tyr Phe	
1765	1770	1775		

ttt aaa aac gat ttg aaa aaa tat gat gtt cct ttg tcg tgg gaa	5416
Phe Lys Asn Asp Leu Lys Lys Tyr Asp Val Pro Leu Ser Trp Glu	
1780 1785 1790	
caa gcc agg ttg cag acg cag aag gag cta cag ctg aga gag gga	5461
Gln Ala Arg Leu Gln Thr Gln Lys Glu Leu Gln Leu Arg Glu Gly	
1795 1800 1805	
cgt ttg gca ata aag cct ttt cat cct tct gca aac aat ttt ccc	5506
Arg Leu Ala Ile Lys Pro Phe His Pro Ser Ala Asn Asn Phe Pro	
1810 1815 1820	
ata cca ttg ctt cac atg cac cgt aac tgg aag agg agc aca gag	5551
Ile Pro Leu Leu His Met His Arg Asn Trp Lys Arg Ser Thr Glu	
1825 1830 1835	
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Cys Ala Gln Glu Gly Arg Ile Pro Ser Thr Glu Asp Leu Met Arg	
1840 1845 1850	
gga gct tct gct gag gag ctc ttg gcg cag tgt ttg tcg agc agt	5641
Gly Ala Ser Ala Glu Glu Leu Leu Ala Gln Cys Leu Ser Ser Ser	
1855 1860 1865	
ctg ctg ctg gag aaa gaa gag aac aag agg ttt gaa gat cag ctt	5686
Leu Leu Leu Glu Lys Glu Glu Asn Lys Arg Phe Glu Asp Gln Leu	
1870 1875 1880	
cag caa tgg ttg tct gaa gac tca gga gca ttt acg gat tta act	5731
Gln Gln Trp Leu Ser Glu Asp Ser Gly Ala Phe Thr Asp Leu Thr	
1885 1890 1895	
tcc ctt ccc ctc tat ctt cct cag act cta gtg tct ctt tct cac	5776
Ser Leu Pro Leu Tyr Leu Pro Gln Thr Leu Val Ser Leu Ser His	
1900 1905 1910	

act att	gaa cct	gtg atg	aaa	aca tct	gta act	act	agc cca	cag	5821
Thr Ile	Glu Pro	Val Met	Lys	Thr Ser	Val Thr	Thr	Ser Pro	Gln	
1915			1920				1925		

agt gac	atg atg	agg gag	caa	ctg cag	ctg tca	gag	gcg aca	gga	5866
Ser Asp	Met Met	Arg Glu	Gln	Leu Gln	Leu Ser	Glu	Ala Thr	Gly	
1930			1935				1940		

acg tgt	cta ggc	gaa cga	cta	aag cac	ctg gaa	agg	ctg atc	cgg	5911
Thr Cys	Leu Gly	Glu Arg	Leu	Lys His	Leu Glu	Arg	Leu Ile	Arg	
1945			1950				1955		

agt tca	agg gaa	gag gaa	gtt	gcc tct	gag ctc	cat	ctc tct	gcg	5956
Ser Ser	Arg Glu	Glu Glu	Val	Ala Ser	Glu Leu	His	Leu Ser	Ala	
1960			1965				1970		

ctg cta	gac atg	gtg gac	att	tgagcagcct	gacctgtggg	gaggggggtct	6007
Leu Leu	Asp Met	Val Asp	Ile				
1975			1980				

ctccccgaaga	gtttctgttt	ttactcaaaa	taatgttatt	ctcagatgct	tgatgcactg	6067
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Phe Gly Gln Pro Ser Leu Phe Gly Gln Asn Ser Thr Leu Ser Gly Lys
35 40 45

Ser Ser Gly Phe Ser Gln Val Ser Ser Phe Pro Ala Ser Ser Gly Val
50 55 60

Ser His Ser Ser Ser Val Gln Thr Leu Gly Phe Thr Gln Thr Ser Ser
65 70 75 80

Val Gly Pro Phe Ser Gly Leu Glu His Thr Ser Thr Phe Val Ala Thr
85 90 95

Ser Gly Pro Ser Ser Ser Ser Val Leu Gly Asn Thr Gly Phe Ser Phe
100 105 110

Lys Ser Pro Thr Ser Val Gly Ala Phe Pro Ser Thr Ser Ala Phe Gly
115 120 125

Gln Glu Ala Gly Glu Ile Val Asn Ser Gly Phe Gly Lys Thr Glu Phe
130 135 140

Ser Phe Lys Pro Leu Glu Asn Ala Val Phe Lys Pro Ile Leu Gly Ala
145 150 155 160

Glu Ser Glu Pro Glu Lys Thr Gln Ser Gln Ile Ala Ser Gly Phe Phe
165 170 175

Thr Phe Ser His Pro Ile Ser Ser Ala Pro Gly Gly Leu Ala Pro Phe
180 185 190

Ser Phe Pro Gln Val Thr Ser Ser Ser Ala Thr Thr Ser Asn Phe Thr
195 200 205

Phe Ser Lys Pro Val Ser Ser Asn Asn Ser Leu Ser Ala Phe Thr Pro
210 215 220

Ala Leu Ser Asn Gln Asn Val Glu Glu Glu Lys Arg Gly Pro Lys Ser
225 230 235 240

Ile Phe Gly Ser Ser Asn Asn Ser Phe Ser Ser Phe Pro Val Ser Ser
245 250 255

Ala Val Leu Gly Glu Pro Phe Gln Ala Ser Lys Ala Gly Val Arg Gln
260 265 270

Gly Cys Glu Glu Ala Val Ser Gln Val Glu Pro Leu Pro Ser Leu Met
275 280 285

Lys Gly Leu Lys Arg Lys Glu Asp Gln Asp Arg Ser Pro Arg Arg His
290 295 300

Gly His Glu Pro Ala Glu Asp Ser Asp Pro Leu Ser Arg Gly Asp His
 305 310 315 320

Pro Pro Asp Lys Arg Pro Val Arg Leu Asn Arg Pro Arg Gly Gly Thr
 325 330 335

Leu Phe Gly Arg Thr Ile Gln Asp Val Phe Lys Ser Asn Lys Glu Val
 340 345 350

Gly Arg Leu Gly Asn Lys Glu Ala Lys Lys Glu Thr Gly Phe Val Glu
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Ser Ala Glu Ser Asp His Met Ala Ile Pro Gly Gly Asn Gln Ser Val
 370 375 380

Leu Ala Pro Ser Arg Ile Pro Gly Val Asn Lys Glu Glu Glu Thr Glu
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Ser Arg Glu Lys Lys Glu Asp Ser Leu Arg Gly Thr Pro Ala Arg Gln
 405 410 415

Ser Asn Arg Ser Glu Ser Thr Asp Ser Leu Gly Gly Leu Ser Pro Ser
 420 425 430

Glu Val Thr Ala Ile Gln Cys Lys Asn Ile Pro Asp Tyr Leu Asn Asp
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Arg	Thr	Ile	Leu	Glu	Asn	His	Phe	Gly	Lys	Ile	Ala	Lys	Val	Gln	Arg
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Ile	Phe	Thr	Arg	Arg	Ser	Lys	Lys	Leu	Ala	Val	Val	His	Phe	Phe	Asp
465					470					475					480

His	Ala	Ser	Ala	Ala	Leu	Ala	Arg	Lys	Lys	Gly	Lys	Ser	Leu	His	Lys
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Asp	Met	Ala	Ile	Phe	Trp	His	Arg	Lys	Lys	Ile	Ser	Pro	Asn	Lys	Lys
		500						505					510		

Pro	Phe	Ser	Leu	Lys	Glu	Lys	Lys	Pro	Gly	Asp	Gly	Glu	Val	Ser	Pro
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Ser	Thr	Glu	Asp	Ala	Pro	Phe	Gln	His	Ser	Pro	Leu	Gly	Lys	Ala	Ala
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Gly	Arg	Thr	Gly	Ala	Ser	Ser	Leu	Leu	Asn	Lys	Ser	Ser	Pro	Val	Lys
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Lys	Pro	Ser	Leu	Leu	Lys	Ala	His	Gln	Phe	Glu	Gly	Asp	Ser	Phe	Asp
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Ser	Ala	Ser	Glu	Gly	Ser	Glu	Gly	Leu	Gly	Pro	Cys	Val	Leu	Ser	Leu
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Ser Thr Leu Ile Gly Thr Val Ala Glu Thr Ser Lys Glu Lys Tyr Arg
595 600 605

Leu Leu Asp Gln Arg Asp Arg Ile Met Arg Gln Ala Arg Val Lys Arg
610 615 620

Thr Asp Leu Asp Lys Ala Arg Thr Phe Val Gly Thr Cys Leu Asp Met
625 630 635 640

Cys Pro Glu Lys Glu Arg Tyr Met Arg Glu Thr Arg Ser Gln Leu Ser
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Val Phe Glu Val Val Pro Gly Thr Asp Gln Val Asp His Ala Ala Ala
660 665 670

Val Lys Glu Tyr Ser Arg Ser Ser Ala Asp Gln Glu Glu Pro Leu Pro
675 680 685

His Glu Leu Arg Pro Leu Pro Val Leu Ser Arg Thr Met Asp Tyr Leu
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Val Thr Gln Ile Met Asp Gln Lys Glu Gly Ser Leu Arg Asp Trp Tyr
705 710 715 720

Asp Phe Val Trp Asn Arg Thr Arg Gly Ile Arg Lys Asp Ile Thr Gln
725 730 735

Gln His Leu Cys Asp Pro Leu Thr Val Ser Leu Ile Glu Lys Cys Thr
740 745 750

Arg Phe His Ile His Cys Ala His Phe Met Cys Glu Glu Pro Met Ser
755 760 765

Ser Phe Asp Ala Lys Ile Asn Asn Glu Asn Met Thr Lys Cys Leu Gln
770 775 780

Ser Leu Lys Glu Met Tyr Gln Asp Leu Arg Asn Lys Gly Val Phe Cys
785 790 795 800

Ala Ser Glu Ala Glu Phe Gln Gly Tyr Asn Val Leu Leu Ser Leu Asn
805 810 815

Lys Gly Asp Ile Leu Arg Glu Val Gln Gln Phe His Pro Ala Val Arg
820 825 830

Asn Ser Ser Glu Val Lys Phe Ala Val Gln Ala Phe Ala Ala Leu Asn
835 840 845

Ser Asn Asn Phe Val Arg Phe Phe Lys Leu Val Gln Ser Ala Ser Tyr
850 855 860

Leu Asn Ala Cys Leu Leu His Cys Tyr Phe Ser Gln Ile Arg Lys Asp
865 870 875 880

Ala Leu Arg Ala Leu Asn Phe Ala Tyr Thr Val Ser Thr Gln Arg Ser
885 890 895

Thr Ile Phe Pro Leu Asp Gly Val Val Arg Met Leu Leu Phe Arg Asp
900 905 910

Cys Glu Glu Ala Thr Asp Phe Leu Thr Cys His Gly Leu Thr Val Ser
915 920 925

Asp Gly Cys Val Glu Leu Asn Arg Ser Ala Phe Leu Glu Pro Glu Gly
930 935 940

Leu Ser Lys Thr Arg Lys Ser Val Phe Ile Thr Arg Lys Leu Thr Val
945 950 955 960

Ser Val Gly Glu Ile Val Asn Gly Gly Pro Leu Pro Pro Val Pro Arg
965 970 975

His Thr Pro Val Cys Ser Phe Asn Ser Gln Asn Lys Tyr Ile Gly Glu
980 985 990

Ser Leu Ala Ala Glu Leu Pro Val Ser Thr Gln Arg Pro Gly Ser Asp
995 1000 1005

Thr Val Gly Gly Gly Arg Gly Glu Glu Cys Gly Val Glu Pro Asp
1010 1015 1020

Ala	Pro	Leu	Ser	Ser	Leu	Pro	Gln	Ser	Leu	Pro	Ala	Pro	Ala	Pro
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Ser	Pro	Val	Pro	Leu	Pro	Pro	Val	Leu	Ala	Leu	Thr	Pro	Ser	Val
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Ala	Pro	Ser	Leu	Phe	Gln	Leu	Ser	Val	Gln	Pro	Glu	Pro	Pro	Pro
1055						1060					1065			

Pro	Glu	Pro	Val	Pro	Met	Tyr	Ser	Asp	Glu	Asp	Leu	Ala	Gln	Val
1070						1075					1080			

Val	Asp	Glu	Leu	Ile	Gln	Glu	Ala	Leu	Gln	Arg	Asp	Cys	Glu	Glu
1085						1090					1095			

Val	Gly	Ser	Ala	Gly	Ala	Ala	Tyr	Ala	Ala	Ala	Ala	Leu	Gly	Val
1100						1105					1110			

Ser	Asn	Ala	Ala	Met	Glu	Asp	Leu	Leu	Thr	Ala	Ala	Thr	Thr	Gly
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Ile	Leu	Arg	His	Ile	Ala	Ala	Glu	Glu	Val	Ser	Lys	Glu	Arg	Glu
1130						1135					1140			

Arg	Arg	Glu	Gln	Glu	Arg	Gln	Arg	Ala	Glu	Glu	Glu	Arg	Leu	Lys
1145						1150					1155			

Gln Glu	Arg Glu Leu Val Leu	Ser Glu Leu Ser Gln	Gly Leu Ala
1160	1165	1170	

Val Glu	Leu Met Glu Arg Val	Met Met Glu Phe Val	Arg Glu Thr
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Cys Ser	Gln Glu Leu Lys Asn	Ala Val Glu Thr Asp	Gln Arg Val
1190	1195	1200	

Arg Val	Ala Arg Cys Cys Glu	Asp Val Cys Ala His	Leu Val Asp
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Leu Phe	Leu Val Glu Glu Ile	Phe Gln Thr Ala Lys	Glu Thr Leu
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Gln Glu	Leu Gln Cys Phe Cys	Lys Tyr Leu Gln Arg	Trp Arg Glu
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Ala Val	Thr Ala Arg Lys Lys	Leu Arg Arg Gln Met	Arg Ala Phe
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Pro Ala	Ala Pro Cys Cys Val	Asp Val Ser Asp Arg	Leu Arg Ala
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Leu Ala	Pro Ser Ala Glu Cys	Pro Ile Ala Glu Glu	Asn Leu Ala
1280	1285	1290	

Arg Gly	Leu Leu Asp Leu Gly	His Ala Gly Arg Leu Gly Ile Ser
1295	1300	1305

Cys Thr	Arg Leu Arg Arg Leu	Arg Asn Lys Thr Ala His Gln Met
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Lys Val	Gln His Phe Tyr Gln	Gln Leu Leu Ser Asp Val Ala Trp
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Ala Ser	Leu Asp Leu Pro Ser	Leu Val Ala Glu His Leu Pro Gly
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Arg Gln	Glu His Val Phe Trp	Lys Leu Val Leu Val Leu Pro Asp
1355	1360	1365

Val Glu	Glu Gln Ser Pro Glu	Ser Cys Gly Arg Ile Leu Ala Asn
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Trp Leu	Lys Val Lys Phe Met	Gly Asp Glu Gly Ser Val Asp Asp
1385	1390	1395

Thr Ser	Ser Asp Ala Gly Gly	Ile Gln Thr Leu Ser Leu Phe Asn
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Ser Leu	Ser Ser Lys Gly Asp	Gln Met Ile Ser Val Asn Val Cys
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Ile Lys	Val Ala His Gly Ala	Leu Ser Asp Gly Ala	Ile Asp Ala
1430	1435	1440	

Val Glu	Thr Gln Lys Asp Leu	Leu Gly Ala Ser Gly	Leu Met Leu
1445	1450	1455	

Leu Leu	Pro Pro Lys Met Lys	Ser Glu Asp Met Ala	Glu Glu Asp
1460	1465	1470	

Val Tyr	Trp Leu Ser Ala Leu	Leu Gln Leu Lys Gln	Leu Leu Gln
1475	1480	1485	

Ala Lys	Pro Phe Gln Pro Ala	Leu Pro Leu Val Val	Leu Val Pro
1490	1495	1500	

Ser Pro	Gly Gly Asp Ala Val	Glu Lys Glu Val Glu	Asp Gly Leu
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Met Leu	Gln Asp Leu Val Ser	Ala Lys Leu Ile Ser	Asp Tyr Thr
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Val Thr	Glu Ile Pro Asp Thr	Ile Asn Asp Leu Gln	Gly Ser Thr
1535	1540	1545	

Lys Val	Leu Gln Ala Val Gln	Trp Leu Val Ser His	Cys Pro His
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Ser	Leu	Asp	Leu	Cys	Cys	Gln	Thr	Leu	Ile	Gln	Tyr	Val	Glu	Asp
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Glu	Arg	Arg	Leu	Gly	Gly	Leu	Ala	Ser	Gln	Glu	Pro	Gly	Ala	Ile
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Ile	Glu	Leu	Phe	Asn	Ser	Val	Leu	Gln	Phe	Leu	Ala	Ser	Val	Val
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Ser	Ser	Glu	Gln	Leu	Cys	Asp	Leu	Ser	Trp	Pro	Val	Thr	Glu	Phe
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Ala	Glu	Ala	Gly	Gly	Ser	Arg	Leu	Leu	Pro	His	Leu	His	Trp	Asn
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Ala	Pro	Glu	His	Leu	Ala	Trp	Leu	Lys	Gln	Ala	Val	Leu	Gly	Phe
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Gln	Leu	Pro	Gln	Met	Asp	Leu	Pro	Pro	Leu	Gly	Ala	Pro	Trp	Leu
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Ser	Arg	Gln	Thr	Gln	Pro	Val	Leu	Gln	Ser	Gln	Val	Glu	Asn	Leu
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Leu	Ile	Ala	Leu	Cys	Ile	Asn	His	Lys	Leu	Arg	Asp	Trp	Thr	Pro
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Pro	Arg	Leu	Pro	Val	Thr	Ser	Glu	Ala	Leu	Ser	Glu	Asp	Gly	Gln
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Ile	Cys	Val	Tyr	Phe	Phe	Lys	Asn	Asp	Leu	Lys	Lys	Tyr	Asp	Val
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Pro	Leu	Ser	Trp	Glu	Gln	Ala	Arg	Leu	Gln	Thr	Gln	Lys	Glu	Leu
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Gln	Leu	Arg	Glu	Gly	Arg	Leu	Ala	Ile	Lys	Pro	Phe	His	Pro	Ser
1805						1810					1815			

Ala	Asn	Asn	Phe	Pro	Ile	Pro	Leu	Leu	His	Met	His	Arg	Asn	Trp
1820						1825					1830			

Lys	Arg	Ser	Thr	Glu	Cys	Ala	Gln	Glu	Gly	Arg	Ile	Pro	Ser	Thr
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Glu	Asp	Leu	Met	Arg	Gly	Ala	Ser	Ala	Glu	Glu	Leu	Leu	Ala	Gln
1850						1855					1860			

Cys	Leu	Ser	Ser	Ser	Leu	Leu	Leu	Glu	Lys	Glu	Glu	Asn	Lys	Arg
1865						1870					1875			

Phe	Glu	Asp	Gln	Leu	Gln	Gln	Trp	Leu	Ser	Glu	Asp	Ser	Gly	Ala
1880						1885					1890			

Phe	Thr	Asp	Leu	Thr	Ser	Leu	Pro	Leu	Tyr	Leu	Pro	Gln	Thr	Leu
1895						1900					1905			

Val	Ser	Leu	Ser	His	Thr	Ile	Glu	Pro	Val	Met	Lys	Thr	Ser	Val
1910						1915					1920			

Thr	Thr	Ser	Pro	Gln	Ser	Asp	Met	Met	Arg	Glu	Gln	Leu	Gln	Leu
1925						1930					1935			

Ser	Glu	Ala	Thr	Gly	Thr	Cys	Leu	Gly	Glu	Arg	Leu	Lys	His	Leu
1940						1945					1950			

Glu	Arg	Leu	Ile	Arg	Ser	Ser	Arg	Glu	Glu	Glu	Val	Ala	Ser	Glu
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